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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/824,422 | 04/15/2004 | Yutaka Tanaka | 00862.022285.1 | 6472 |

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| EXAMINER | |
|---|---|
| MOORE, KARLA A | |
| **ART UNIT** | **PAPER NUMBER** |
| 1763 | |

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/824,422 | TANAKA ET AL. | |
| | Examiner | Art Unit | |
| | Karla Moore | 1763 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *23-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/897,390.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,224,679 to Sasaki et al. in view of U.S. Patent No. 5,413,664 to Yagi et al.

4. Sasaki et al. disclose a semiconductor processing apparatus comprising a plurality of processing chambers/units substantially as claimed and comprising: a process chamber (not illustrated, column 4, rows 63 through column 5, row 1 and column 5, rows 51-56); a load lock chamber (13) including first (15A) and second gate valves (19), and connected to the process chamber 3through a conveyance chamber (15) via said gate valve (15A); a booth (14) connected to said load lock chamber via said second gate valve; a transfer mechanism (13A) configured to transfer the wafer from another apparatus different from said exposure apparatus into said load lock chamber through said booth; and a first gas flow forming mechanism (multiple part numbers, 20-28 and 31-32) including a filter (21 and 22) and configured to cause clean gas to flow through said booth during transferring of the wafer by said transfer mechanism from the other apparatus into said load lock chamber.

5. Sasaki et al. disclose the invention substantially as claimed and described above.

6. However, Sasaki et al. fail to teach a second gas flow forming mechanism, configured like the first gas flow forming mechanism.

7. The courts have ruled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

8. In the instant case the same results would be expected by providing a second gas flow forming mechanism, configured like the first gas flow forming mechanism. Thus, such a feature would have been obvious to one of ordinary skill in the art.

9. Sasaki et al. disclose the invention substantially as claimed as described above.

10. However, Sasaki et al. fail to teach said processing apparatus specifically comprising a process chamber capable of exposing a wafer to light via a mask.

11. Yagi et al. teach that the process of exposing a semiconductor wafer to light via a mask is one of the processes used in preparing a semiconductor wafer with a pattern (column 1, rows 14-42). Yagi et al. disclose a multichamber apparatus comprising an exposure chamber for carrying out this process (Figure 4 and Figure 6, 606)

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the semiconductor apparatus of Sasaki et al. as an apparatus comprising an exposure chamber for exposing a substrate with light through a mask in order to carry out a known semiconductor manufacturing step as taught by Yagi et al.

13. With respect to claim 24, said first gas flow forming mechanism includes a filter (as described above) and a circulation unit (24) configured to exhaust gas from said booth and to return the exhausted gas to said booth through said filter (column 5, row 64 through column 6, row 4).

14. With respect to claim 25, said gas forming mechanism includes a filter (as described above) and a fan unit (20) configured to supply gas to said booth through said filter.

15. With respect to claim 26, said first gas flow forming mechanism is configured to form a laminar flow of gas in said booth (column 6, rows 11-15).

16. With respect to claim 27, Sasaki et al. teach that a plurality of process chambers/units are provided and that they may be used for coating (film forming). See column 5, rows 55-56.

17. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. and Yagi et al. as applied to claims 23-27 above, and further in view of U.S. Patent No. 5,455,082 to Saito et al. and U.S. Patent No. 4,792,378 to Rose et al.

18. Saito et al. disclose a load lock chamber (Figure 15, 401) having a substrate transfer path between a first gas atmosphere and a second gas atmosphere, the load lock chamber is provided with a gas supply pipe/gas flow forming mechanism (403) which supplies a clean gases to the load lock chamber and a gas exhaust mechanism (402) for exhausting the clean gases from the load lock chamber for the purposes of restoring pressure to the load lock chamber and cleaning moisture, hydrocarbons and the like from the surfaces of the wafer column 14, row12 through column 15, row 19).

19. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a load lock chamber with a gas flow forming mechanism and a gas exhausting mechanism in Sasaki et al. and Yagi et al. in order to restore pressure to the load lock chamber and in order to clean moisture, hydrocarbons and the like from the surfaces of the wafer as taught by Saito et al.

20. Sasaki et al., Yagi et al. and Saito et al. disclose the invention substantially as claimed and as described above.

21. Sasaki et al., Yagi et al. and Saito et al. fail to teach a plate with perforations through which the clean gas is supplied into said load lock chamber to cause the flow of the clean gas supplied through the gas supply pipe to be uniform.

22. Rose et al. disclose the use of a metallic gas straightening plate with perforations (Figure 1, 20) provided at an entire upper portion of a chamber for the purpose of providing a rigid structure that can achieve uniform dispersal of a gas (column 3, row 61 through column 4, row 3).

23. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a metallic gas straightening plate at an entire upper portion of the chamber in Sasaki et al., Yagi et al. and Saito et al. in order to provide a rigid structure capable of achieving uniform dispersal of a gas as taught by Rose et al.

24. With respect to claims 29 and 30, as described above, Sasaki et al. teaches providing gas flow forming mechanisms with a circulation unit (24) configured to exhaust gas from the area to which it is supplied and to return the exhausted gas to said area through a filter (column 5, row 57 through column 6, row 14) and Sasaki et al. teaches providing the gas flow forming mechanism configured to form a laminar flow of gas in said area (column 6, rows 11-15). The invention with these provisions is provided for the purpose of controlling gas in a processing system which can prevent drop of the yield by preventing impure gases from adhering to an object to be processed therein (column 2, rows 61-65).

### *Response to Arguments*

25. Applicant's arguments with respect to claims 23-28 have been considered but are moot in view of the new ground(s) of rejection. Saito et al. teaches a second gas flow forming mechanism provided in a load lock chamber. Rose et al. teaches use of a perforated plate through which the clean gas is supplied. Sasaki et al. teaches providing a gas flow forming mechanism with the other features of the newly added second gas flow forming mechanism.

### *Conclusion*

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karla Moore
Primary Examiner
Art Unit 1763
11 September 2006